

H.A.A.U.G.



HOUSTON AREA APPLE USERS GROUP

THE APPLE BARREL

=====

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President, Bruce Barber

Editor, Ed Seeger

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<<< CLUB NOTES >>>

Houston Area Apple Users Group
 APPLE BARREL
 4331 Nenana Drive
 Houston, TX 77035

The HOUSTON AREA APPLE USERS GROUP is an Apple II user club, not affiliated with Apple, Inc., or with any retail computer store. HAAUG is a member of the International Apple Core and supports its purposes and publications. General membership meetings are held on the second Wednesday of each month in the school cafeteria of St. Agnes Academy, 9000 Bellaire Boulevard (just west of Gessner), and start at 6:30 p.m. An additional software swap is held the last Saturday of each month at the clubhouse of the Houston Amateur Radio Club, 7011 Lozier Street, west of the Astrodome. These Saturday meetings begin at 2:00 p.m.

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OFFICERS / EXECUTIVE BOARD

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MEMBERSHIP INFORMATION

Dues are \$18.00 per 12-month period for regular memberships, \$6.00 for students through high school and where no adult member of the family is an Apple user. Please make checks payable to "Houston Area Apple Users Group," and mail to Lee E. Gilbreth,

Membership Chair, 3609 Glenmeadow, Rosenberg, TX 77471. This includes a subscription to APPLE BARREL, which is published nine times a year. Newsletter exchanges with similar clubs are invited.

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APPLE BARREL REPRINT POLICY

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SPECIAL INTEREST GROUPS

Members who share a common interest are encouraged to form Special Interest Groups to more fully explore their areas. Meetings may be arranged by common consent of the group and will ordinarily have one member who serves to coordinate or convene the meetings. If you would like to start a group around any given interest, please contact one of the club officers. If you would like to be in touch with others who share one of the following interests with you, please phone the coordinator.

Current groups are:

- 1) BUSINESS APPLICATIONS
Coordinated by Rudge Allen,
622-3979
- 2) PASCAL USERS
Directory being assembled
Pat McGee coordinating,
663-6806
- 3) MODEM USERS
Directory being assembled

Herb Crosby coordinating,
497-1061

- 4) HAM RADIO OPERATORS
Coordinated by Ed Seeger, WB5PTW
723-6919
- 5) NEW MEMBERS
Coordinated by Lee Gilbreth,
342-2685
- 6) EDUCATIONAL APPLICATIONS
Coordinated by Darrell Kachilla,
498-0186

-----*-----

APPLE BULLETIN BOARD SYSTEM

The Houston Area Apple Users Group supports an ABBS evenings and weekends, 6:00 pm through 8:30 am, and all weekend long. Feel free to sign-on and place your want-ad, meeting notice, request for help, Aggie joke, etc. Any ASCII terminal, Apple computer or not, with suitable modem or coupler, will give you ABBS capability. Call:

713/654-0759

SYSOP is Rudge Allen, 622-3979.

GOOD NEWS, BAD NEWS



"I would be most grateful, Miss Anderson, if you would just type my words, not process them!"

<<< BARREL-ROLLING >>>

Writing, editing, stapling, addressing and finally sorting your newsletter for bulk mailing is an ever-increasing job. HAAUG's membership is now 285 and continues to grow. APPLE BARREL itself has grown from a simple "news & notes" format to a significant non-profit forum for program and information exchange. Thanks to all who write for us, and to Sara Seeger and A. D. Smith, whose service as Production Assistants has kept the BARREL rolling month after month.

<<< DUE TO DUES BEING DUE..... >>>

HAAUG has a number of members whose dues are in arrears, but who do not know it. It's not your fault! We have not been very good about keeping our members up-to-date on their expirations, and numerous issues of the APPLE BARREL have gone out 'way past renewal time.

Thanks now to Chris Myers, our Mail Management (c) program has been modified to print your renewal date on the address label of the newsletter. Take a look on the last page mailing wrapper to see when your renewal is due. HAAUG will no longer carry you past your date. We must assume that if your renewal has not reached us before or during the 45-day period following expiration, that you wish to drop your membership.

Dues for a 12-month period are \$18.00, and bring you not only the APPLE BARREL, but software swap privileges, local dealer discounts (totaling several hundred dollars in 1979-80), the Apple Bulletin Board System, hardcopy library borrowing rights, programs and speakers, technical advice, and a lot of fun in getting the most out of your Apple!

Send your check for \$18.00 to:

Lee E. Gilbreth, Membership Chairman
3609 Glenmeadow
Rosenberg, TX 77471

Make your check payable to "Houston Area Apple Users Group" and mark it for "renewal."

<<< PASCAL TUTORIAL - Lesson 2 >>>

Hello again! It's been a while since the first installment (February, 1980, vol. 3, no. 2) of the Pascal tutorial. In short, I hope to pick up where we left off. I would also like to note and correct an error in that issue. Programs zero through three (included in this issue) do not deal with data types as announced. Instead, they serve as very elementary examples of Pascal programs. Program four does deal with data types, which are the subject of this month's lesson. Also included are programs ten through thirteen, which expand on the looping constructs presented in lesson 1. Try to convert these programs to their BASIC counterparts.

DATA TYPES

What are "data types"? Many personal computer enthusiasts approach this subject with anxiety. They wonder, "Are 'data types' another one of those mysterious, hard-to-understand subjects from a computer scientist's most recent thesis paper?" The truth of the matter is most computer hobbyists have already played with data types unknowingly. Therefore, do not be intimidated when you learn that in order to use Pascal effectively, one needs to understand "data types". The understanding has already progressed. Allow me to show you the data types of BASIC and some Pascal equivalents.

First there is the "integer" data type, best known to Apple users in Integer BASIC. The more advanced Apple user will also recognize this as the % variable in Applesoft BASIC. Integers on the Apple (or any machine) are whole numbers (ie., without a decimal or fractional part) with an optional plus or minus sign. Furthermore, "integers" on the Apple must always be less than or equal to +32767 and greater than or equal to -32768 (i.e., $-32768 \leq x \leq +32767$). Some examples of integers are 0, 32, -591, +32767. Multiplication, addition and subtraction behave as expected, but division of integers results in truncated whole parts. For example $34/3 = 11$ in Integer BASIC. Try it!

In Pascal, integer variables (in fact, all variables) must be "declared" before using them. The syntax for an integer "declaration" is :

```
var COUNT,I:integer;
    SIZE:integer;
```

The above "declaration" announces that the variables COUNT, I and SIZE are of the integer data type, just like the % variables of Applesoft. Using these variables we are now permitted to make assignments and comparisons. For

instance:

```
COUNT:=0; (*this is an assignment statement*)
I:=3;
I:=I-1;
if I>4*COUNT then SIZE:=I div 9;
(*notice the symbol 'div' represents integer division*)
writeln(SIZE);
```

Because of the "strong data typing rules" of Pascal, we are forbidden from ever making assignments such as follow:

```
SIZE:=-3.9E10;
I:=4/3; (*"real" division*)
```

The reason for the restriction is that SIZE and I are integer variables; whereas, -3.9E10 and 4/3 are "real" expressions. This brings us to the next data type.

The second data type of BASIC is the "real" number data type. "Real" numbers are the ones you and I are probably most familiar with. They are also known as floating point numbers to some of us. For instance, the following are "real" numbers: 9, 4.5, -3.0, 8E10, 0.0059, 0.0. "Real" numbers are complete numbers in the sense that they have both whole and fractional parts. Integers are a subset of real numbers. The range of magnitude for real numbers on the Apple computer is much larger than for integers (-1E38 to +1E38). Arithmetic with real numbers behaves as one would expect - division keeps the fractional part.

Pascal also allows the use of real numbers (once they have been declared). Here are a few examples of both declaration and usage:

```
var COUNT:integer;
COST:real;
X,Y:real;
COUNT:= 32;
COST:= 4.95;
COST:= COST*COUNT;
COST:= COST + 45;
X:= cos(30); Y:= sin (30);
if X/3> X div 3 then writeln('fractional');
```

Notice the use of integers in real expressions. This relaxation of Pascal's strict typing rules is allowed in most implementations, because integers are considered a subset of reals. Pascal implementors allow other concessions as we shall see.

Finally, there is the "string" data type of BASIC. Many (if not most) small computer owners are quite familiar with variables such as AB\$ or K\$. Programmers call these "string variables," because this is their data type. "Strings" are sequences of characters. In BASIC one

represents a string by enclosing the sequence of characters in double quotation marks ("). Some examples of strings are: "HELLO, MY NAME IS JOHN", "ZAP", "G", ".", "5.6", "". Notice that the last example had nothing between the quotation marks. This is called a "null" or "empty" string. Null strings are said to be of length zero. A string with one character (eg. ".") has a length of one, and so on. Besides the characteristic of length, strings also have some elementary operations. Though we cannot add, multiply or divide strings as in ordinary arithmetic, we can concatenate, search for a substring and extract parts from a string. Thus in BASIC we use the expression "ABC"+"DEF" to concatenate two strings into "ABCDEF". Another construct is MID\$("ABCDEF",2,3), which extracts "BCD" from the source string. These operations illustrate that the string data type has properties like any other data type. Strings have the property of being manipulated.

Standard Pascal as defined by Jensen and Wirth in their "Pascal User Manual and Report" do define strings as a basic data type. Fortunately, the UCSD Pascal implementation does allow a string data type, but one must keep in mind that this is an extension to Pascal. Strings are implemented in UCSD Pascal as packed arrays of characters, which they are.

In order to use the string data type one must declare them as always:

```
var NAME:string; RALF:string(255);
```

Furthermore, strings in Pascal are enclosed in single quotes rather than double, and unless specifically stated, the maximum length is set at 80. Using the syntax of the second declaration above, one can extend (or shorten) the length for a particular string variable to anything between one and 255. Examples of use follow:

```
RALF:='The old maid'; writeln(RALF); NAME:=''; (*single quotes!*)
```

There also exist some special functions to concatenate, etc., but this will have to wait for another lesson. As noted, strings are packed arrays of characters, which are the next topic.

Unfortunately, BASIC only has three data types. Pascal, on the other hand, offers a variety of other data types. One of these is the "character" data type. "Characters" are basic to most of us already, but we are used to seeing them as parts of strings. In Pascal, the char data type is as distinct and separate from a string as an integer is from a real. Character constants look like strings that consist of a single character. Whether or not constants such as "X" are treated as strings or as characters depends upon context. Some examples will help:

```
var ADDRESS:string;
```

```

YES,KETCHUP:char;
KETCHUP:='X'; (*X is a char*)
ADDRESS:='Y'; (*Y is a string*)
if YES >='A' and YES <='Z' then writeln('letter');
(*'A' and 'Z' are characters*)

```

To determine what data type a constant belongs to, ask yourself what type of expression is represented. If a character variable is involved, then chances are that the constants are characters. Here are some more examples. A few of these are illegal due to data type conflicts. Some are illegal because '+' means different things in Pascal.

```

ADDRESS:=YES; (*illegal*)
KETCHUP:='HELLO'; (*illegal*)
YES:=ADDRESS(1); (*OK*)
ADDRESS:='AB'+'BC'; (*illegal*)

```

Why?

Next time we will discuss the format of "programs" and "procedures". Also included will be more examples of how to use data types. Till then, good luck with Pascal!

> David C. Black

SIMPLE MESSAGES AND MATH

```

PROGRAM ZERO;
BEGIN
  (*WHAT DO I DO?*)
END.

```

```

PROGRAM ONE;
BEGIN
  WRITELN('YOU SHOULD EASILY':2);
  WRITELN('RECOGNIZE':16);
  WRITELN('THIS PROGRAM IN BASIC')
END.

```

```

PROGRAM TWO;
BEGIN
  WRITE('HOUSTON IS THE NATIONS ');
  WRITE(7-4);
  WRITELN('RD LARGEST CITY');
END.

```

```

PROGRAM FOUR;
  VAR R:REAL;
      I:INTEGER;
BEGIN
  R:=(14-16)/3;
  WRITELN('R=',R);
  WRITELN('TRUNC(R) = ',TRUNC(R));
  WRITELN('ROUND(R) = ',ROUND(R));
  I:=TRUNC(100*R);
  WRITELN('I = ',I)
END.

```

```

PROGRAM 10;
  VAR I:INTEGER;

BEGIN
  I:=1;
  REPEAT
    WRITELN(I);
    I:=I+1
  UNTIL I > 10;
  WRITELN('FINISH I = ;I)
END.

```

```

PROGRAM ELEVEN;
  VAR I:INTEGER;

BEGIN
  I:=11;
  WHILE I <= 10 DO BEGIN
    WRITE('*'); I:=I+1
  END.
  WRITELN(I)
END.

```

```

PROGRAM TWELVE;
  VAR I:INTEGER;

BEGIN
  I:=11
  REPEAT
    WRITE('*');
    I:=I+2
  UNTIL I > 10;
  WRITELN(I)
END.

```

```

PROGRAM THIRTEEN;

  VAR I:INTEGER;
      DONE:BOOLEAN;

```

```

BEGIN
  I:=32;
  REPEAT
    DONE:=NOT(I < 21 OR I > 22);WRITE('*');
    I:=I - ((I-21) DIV ABS (I-21)) * I DIV 2.
  UNTIL DONE;
  WRITELN(I)
END.

```

THE H.A.A.U.G.



PRESENTS

<<< WANT AND DON'T WANT ADS >>>

LETTER-QUALITY PRINTER/TERMINAL: \$1300. This is the Anderson-Jacobson IBM Selectric machine that has printed your APPLE BARREL for well over a year now! It is an I/O terminal as well as a printer. Use it as a quality Selectric typewriter offline, or for beautiful hardcopy online. Comes configured for a serial interface and will run nicely off the Apple Communications Card with a small handshaking modification. Includes a tractor feed mechanism for fanfold paper; three Selectric typeballs; operating manual. Delivered within 100 miles of Houston. I will arrange a demonstration for you in my home at your convenience. (Keep your newsletter coming and help Ed Seeger pay for his new SpinWriter!) 723-6919 evenings after August 25th.

ALF MUSIC BOARDS: \$230 each, two for \$425 with complete users manual, technical manual, special timing board, and several disks of very good stereo music. These synthesizer boards plug into your peripheral slots and play through your stereo amp. You've got to hear the things to believe your Apple's doing it! No comparison to other boards now on the shelves. Remarkable hires display of measures, key signature, treble and bass clefs, etc. upon entry of notes. See review articles in Creative Computing, June '79, p.102 and June '80, p.74. These two boards will also interface directly with the Alpha-Syntauri keyboard system just introduced at NCC! I will arrange a demonstration at your convenience for seriously interested buyers. Ed Seeger, 723-6919 evenings after August 25th.

WANTED: ONE GOOD DEAL ON APPLESOFT ROM CARD. Call Charlie Anderson, 688-2105 day or night.

I AM INTERESTED IN POSSIBLY MARKETING YOUR SOFTWARE. I wrote "Tuesday Night Football" and have dealers in 10 states. If you have developed a distinctive games program, polished or unpolished, I would like to talk about it with you. Charlie Anderson Night or day, 688-2105.

IS ANYONE INTERESTED in a 64-channel P-I-O board and buffer board for same? Contact Martin Edelstein, 729-4199

IS ANYONE INTERESTED in play testing computerized wargames similar to Panzer Blitz or Kriegspiel? Call Martin Edelstein, 729-4199.

SELL APPLE II+ 48K with Disk II and controller card. Al Ashmore, 492-2002 evenings.

<<< DOS 3.2 DISASSEMBLY >>>

We continue in this issue our fifth installment of Lee Meador's excellent series on the Disk Operating System, as originally published in the "Fort Worth Apple Users Group Newsletter." Lee is thinking of preparing a technical booklet on Apple DOS, with these studies as the core. Comments, errors noted and suggestions can be directed to him at 1401 Hillcrest Drive, Arlington, TX 76010.

DOS Disassembly

by Lee Meador

This is the third installment of the assembly listing of the Apple II DOS 3.2. This, as well as, last issue's pages are taken from the first edition of the Wozpak put out by Apple Pugetsound Program Library Exchange. The same pages were also sent to me in a not so good copy by the man at the Apple Hot Line. They are copies of the original listing for the RWTS subroutine. This month's part is that portion that does the initialization of a new diskette. Next month's

installment will be the six routines that RWTS calls. The commented disassembly is finished and I planned to put them in for this month but there isn't enough room. I also have finished the work on an explanation of how the electronics on the Disk Interface card work. That would include the P6 ROM, the shift register, the 6 bit latch, and a few notes about the differences in the BASIC and Pascal P6 ROMS.

If you have any questions or comments please contact me at the address on the back cover. I'll be glad to take some appropriate action. These articles will eventually be available in book form.

```

410 *****
411 *
412 *
413 *      DISK II:
414 * THIRTEEN SECTOR FORMATTER
415 *
416 *      COPYRIGHT 1978 BY:
417 *      APPLE COMPUTER INC.
418 *
419 *      R. WIGGINTON
420 *
421 *****

```

```

423 ****  DISC SYSTEM FORMATTER EQUATES
424 FILLCNT EQU  $4B ; GENERAL COUNTER+
425 SCTR  EQU  FILLCNT ; SECTOR NUMBER.
426 A'    EQU  $4A ; A DUMMY LOCATION FOR TIMING PURPOSES.
427 TRKCNT EQU  $41 ; MY SPECIAL TRACK COUNTER
428 EXCNT  EQU  $46 ; ANOTHER GENERAL COUNTER.
429 YCNT   EQU  $47 ; NYBBLE COUNTER

```

```

431 * CODE EXPLANATION & FLOWCHART
432 *
433 *
434 *
435 * -----
436 * COPYRIGHT 1978 APPLE COMPUTER INC.
437 * -----
438 *
439 * THIRTEEN SECTOR DISK FORMATTER:
440 *
441 * FLOWCHART:
442 *
443 * 1. SET TRACK COUNT=0
444 *
445 * 2. SET AUTO SYNC COUNT=80
446 * THIS SAYS THAT IN FRONT OF EVERY DATA SECTOR THERE WILL
447 * BE 80 NYBBLES OF AUTO SYNC INFORMATION.
448 *
449 * 3. MOVE OUT TO TRACK 0
450 *
451 * 4. WRITE THIS TRACK SEVERAL TIMES OVER WITH SELF-
452 * SYNC NYBBLES
453 *
454 * 5. FORMAT TRACK:
455 *
456 * A. SET SECTOR COUNT=0
457 * B. WRITE (AUTO SYNC COUNT) NYBBLES OF SELF-SYNC.
458 * C. WRITE ADDRESS MARKS
459 * D. WRITE VOLUME NUMBER, TRACK NUMBER, SECTOR
460 * NUMBER, AND CHECKSUM BYTES.
461 * E. WRITE CLOSING ADDRESS MARK.
462 * F. WRITE 429 NYBBLES OF SELF-SYNC. NOTE THAT
463 * IS THE SAME NUMBER OF NORMAL NYBBLES
464 * AS ARE WRITTEN IN A SECTOR, DATA PORTION,
465 * BUT SINCE THE DATA MARKS ARE NOT THERE,
466 * THE SECTOR CANNOT BE READ UNTIL IT
467 * HAS BEEN WRITTEN TO. THIS IS EASIER
468 * FOR THE FORMATTER, AND AN ADDED FEATURE
469 * TO THE USER.
470 * G. SECTOR COUNT=(SECTOR COUNT+7) MOD 13
471 * THIS INTER LEAVES THE SECTORS IN THE
472 * FOLLOWING ORDER:
473 * 0 10 7 4 1 11 8 5 2 12 9 6 3 0 ...
474 * THIS IS TO ALLOW PROCESSING TIME
475 * BETWEEN READING 'CONSECUTIVE' SECTORS.
476 *
477 * J. IF SECTOR NUMBER<>0, GO TO STEP A.
478 *
479 *
480 * 6. READ THE NEXT ADDRESS FIELD.
481 * 7. IF NOT SECTOR ZERO, WE HAVE WRITTEN
482 * TOO MUCH INFORMATION ON THIS TRACK. THEREFORE,
483 * SYNC COUNT=SYNC COUNT-1
484 * IF NOT ON TRACK ZERO, MOVE OUT A TRACK
485 * AND LOCATE ITS SECTOR ZERO, THEN MOVE BACK
486 * IN TO CURRENT TRACK. THIS WILL ALLOW
487 * GOING IN A TRACK AND HAVING SECTOR ZERO
488 * AVAILABLE IMMEDIATELY, WHEN DOING A READ
489 * COVERING SEVERAL TRACKS.
490 * NOW, LOOP BACK TO STEP 5.
491 *
492 * 8. IF SECTOR ZERO, WE HAVE FORMATTED THIS
493 * TRACK CORRECTLY. MOVE IN A TRACK AND FORMAT THE NEXT

```

```

498 *   MOTOR ON & FILL TRACK WITH SYNC
499 *
500 *   ENTER FORMATTER HERE:
501 *
3E9C A9 80 502 DSKFORM LDA  **80 ; GO TO TRACK 00
3E9E 8D 78 04 503 STA  CURTRK ; SET UP WHERE I AM
3EA1 A9 00 504 LDA  **00
3EA3 85 41 505 STA  TRKCNTR ; INIT MY COUNTER
3EA5 20 1E 3A 506 JSR  SEEKABS
507 *
508 *   MOTOR RUNNING, AND ON TRACK ZERO.
509 *   NOW FORMAT THIS TRACK:
510 *
3EAB A9 AA 511 DSKF2 LDA  **AA ; STORE CONSTANT IN ZERO PAGE FOR TIMING
3EAA 85 4A 512 STA  AA
3EAC A0 50 513 LDY  **50
3EAE 84 47 514 TRKFRM STY  YCNTR ; INITIALLY 80 NYBBLES OF SELF-SYNC BEFORE
3EB0 A9 27 515 LDA  **27 ; WRITE TRACK FULLY WITH
3EB2 85 48 516 STA  FILLCNTR ; SELF-SYNC CODES
3EB4 8D 8D C0 517 LDA  Q6H,X
3EB7 8D BE C0 518 LDA  Q7L,X ; GET READY...
3EBA A9 FF 519 LDA  **FF ; WRITING DATA
3EBC 9D BF C0 520 STA  Q7H,X ; START WRITING
3EBF DD 8C C0 521 CMP  Q6L,X
3EC2 24 00 522 BIT  0 ; DELAY 3 CYCLES TO FALL INTO LOOP
3EC4 88 523 WRTRK DEY  ; SECTION IS TIMING-SENSITIVE,
3EC5 F0 0F 524 BEQ  NXTPRT ; I.E., NO BRANCHES CAN CROSS
3EC7 48 525 PHA  ; PAGE BOUNDARIES.
3EC8 68 526 PLA  ; NOW WAIT 27 MICROSECONDS BETWEEN
3EC9 EA 527 NOP  ; WRITES TO GENERATE SELF-SYNC.
3ECA 48 528 CONSYNC PHA
3ECB 68 529 PLA
3ECC EA 530 NOP
3ECD EA 531 NOP
3ECE 9D 8D C0 532 STA  Q6H,X ; WRITE NEXT NYBBLE OF SYNC
3ED1 DD 8C C0 533 CMP  Q6L,X
3ED4 80 EE 534 BCS  WRTRK ; ALWAYS TAKEN.
3ED6 C6 48 535 NXTPRT DEC  FILLCNTR ; TRACK DONE?
3ED8 D0 F0 536 BNE  CONSYNC

```

```

538 *   SECTOR-BY-SECTOR FORMAT
539 *
540 *   TRACK IS NOW FILLED WITH SELF SYNC.
541 *   NOW WRITE THE FORMAT ON IT.
542 *
JEDA A4 47 543 LDY YCNT ;GET NUMBER OF NYBBLES TO GO BEFORE ADT
3EDC EA 544 NOP
3EDD EA 545 NOP
3EDE D0 06 546 RCTIM BNE WRITSF ;ALWAYS TAKEN.
3EE0 48 547 FRMWSYNC PHA ;WRITE SELF-SYNC BEFORE
3EE1 68 548 PLA ;THIS SECTOR
3EE2 48 549 WRIT2 PHA
3EE3 68 550 PLA
551 ZERO EQU 0000 ;FOR GARY'S BUG
3EE4 C1 00 552 CMP (ZERO,X) ;6 CYCLES DELAY
3EE6 EA 553 WRITSF NOP
3EE7 9D 8D C0 554 WRIT3 STA G6H,X ;WRITE NEXT NYBBLE
3EEA DD 8C C0 555 CMP G6L,X ;OF AUTO SYNC
3EED 88 556 DEY
3EEE D0 F0 557 BNE FRMWSYNC
3EF0 A9 D5 558 LDA #D5 ;START ADDRESS MARKS
3EF2 20 CA 3F 559 JSR WNIBLA
3EF5 A9 AA 560 LDA #AA
3EF7 20 CB 3F 561 JSR WNIBLB2
3EFA A9 B5 562 LDA #B5
3EFC 20 CB 3F 563 JSR WNIBLB2
3EFF A5 2F 564 LDA VOLUME
3F01 20 BB 3F 565 JSR WBYTE ;WRITE VOLUME NUMBER.
3F04 A5 41 566 LDA TRKCNT
3F06 20 BB 3F 567 JSR WBYTE ;TRACK NUMBER.
3F09 A5 4B 568 LDA SCTR
3F0B 20 BB 3F 569 JSR WBYTE ;SECTOR NUMBER.
3F0E A5 2F 570 LDA VOLUME
3F10 45 41 571 EOR TRKCNT
3F12 45 4B 572 EOR SCTR
3F14 48 573 PHA
3F15 4A 574 LSR
3F16 05 4A 575 ORA AA
3F18 9D 8D C0 576 STA G6H,X ;AND CHECKSUM.
3F1B DD 8C C0 577 CMP G6L,X
3F1E 68 578 PLA
3F1F 09 AA 579 ORA #AA
3F21 20 CA 3F 580 JSR WNIBLA
3F24 A9 DE 581 LDA #DE ;CLOSE ADDRESS MARKS
3F26 20 CB 3F 582 JSR WNIBLB2
3F29 A9 AA 583 LDA #AA
3F2B 20 CB 3F 584 JSR WNIBLB2
3F2E A9 EB 585 LDA #EB
3F30 20 CB 3F 586 JSR WNIBLB2
3F33 A9 FF 587 LDA #FF ;CONTINUE WRITING SYNC
3F35 20 CB 3F 588 JSR WNIBLB2
3F38 A0 02 589 LDY #02 ;COUNT SELF-SYNC THROUGH WHERE DATA
3F3A B4 46 590 STY EXCNT ;IS SUPPOSED TO GO. SINCE
3F3C A0 AD 591 LDY #AD ;THE DATA SECTION WILL BE ILLEGALLY
3F3E D0 06 592 BNE INTOIT ;FORMATTED. IT CANNOT BE READ
593 * UNTIL IT HAS BEEN WRITTEN WITH A NORMAL WRITE.
594 * ONCE AGAIN, NO BRANCHES IN THIS SECTION CAN CROSS
595 * ANY PAGE BOUNDARIES. NOW WRITE THE FAKE SECTOR:
3F40 88 596 FAKESCT DEY ;COUNT NYBBLES IN SECTOR.
3F41 F0 0D 597 BEQ NXTTRY ;THIS GROUP DONE?
3F43 48 598 PHA ;23 MICRO-SECONDS PER NYBBLE
3F44 68 599 PLA

```

3F46 48	601	INTOIT	PHA	
3F47 6B	602		PLA	
3F48 9D 8D CO	603		STA	Q6H, X
3F4B DD BC CO	604		CMP	Q6L, X
3F4E B0 F0	605		BCS	FAKESCT ; ALWAYS TAKEN.
3F50 C6 46	606	NXTTRY	DEC	EXCNT
3F52 D0 F2	607		BNE	INTOIT
3F54 A4 47	608		LDY	YCNT ; READY FOR LOOP TO SYNCER.
3F56 18	609		CLC	
3F57 24 00	610		BIT	0
3F59 9D 8D CO	611		STA	Q6H, X
3F5C BD BC CO	612		LDA	Q6L, X
3F5F A5 4B	613		LDA	SCTR ; NEXT SECTOR NUMBER
3F61 69 0A	614		ADC	#0A ; IN INTERLEAVE FASHION.
3F63 85 4B	615		STA	SCTR
3F65 E9 0C	616		SBC	#0C ; SECTOR 14? IF 60, DONE!
3F67 F0 0A	617		BEQ	TRKDON ; ELSE, LOOP BACK.
3F69 B0 01	618		BCS	CHNGIT ; DO INTERLACE!!!
3F6B 2C	619		HEX	2C ; SKIP OVER NEXT STA...
3F6C 85 4B	620	CHNGIT	STA	SCTR ; UPDATED SECTOR NUMBER
3F6E A9 FF	621		LDA	#FF ; LOOP AGAIN
3F70 4C E7 3E	622		JMP	WRIT3 ; ALWAYS TAKEN

FWAUG Newsletter



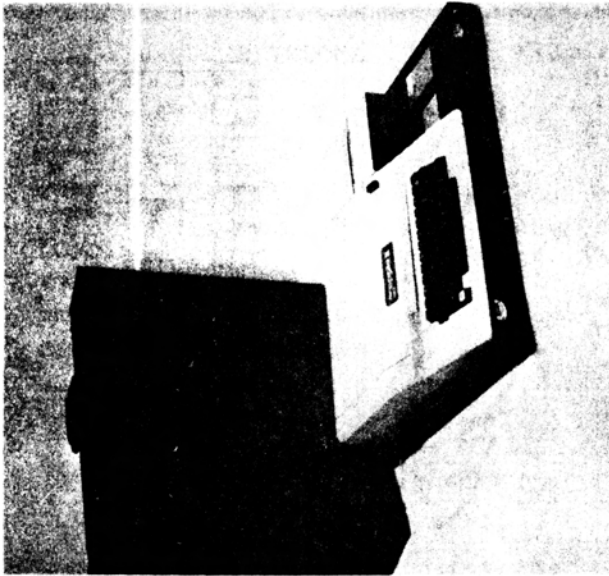
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624 * CHECK TRACK ROUTINE
3F73 48 625 TRKDON PHA ; ALLOW WRITING OF ONE EXTRA NYBBLE
3F74 68 626 PLA
3F75 A4 47 627 LDY YCNT
    77 BD BD CO 628 LDA G6H,X ; SENSE WRITE PROTECT
3F7A BD BE CO 629 LDA G7L,X ; GO INTO READ MODE
3F7D 30 34 630 BMI DRIVERR ; IF WRITE-PROTECTED.
3F7F 88 631 DEY ; DELAY TEST SYNC PERIOD.
3F80 48 632 WLOOP PHA ; DELAY 26 MICROSECONDS EACH LOOP
3F81 68 633 PLA
3F82 EA 634 NOP
3F83 EA 635 NOP
3F84 24 00 636 BIT 0
3F86 48 637 PHA
3F87 68 638 PLA
3F88 88 639 DEY
3F89 D0 F5 640 BNE WLOOP ; LOOP BACK
3F8B 20 6 39 641 JSR RDADR ; READ NEXT ADDRESS FIELD.
3F8E B0 04 642 BCS NOGOOD ; IF CARRY IS SET, BAD READ
3F90 A5 2D 643 LDA SECT ; SECTOR 0?
3F92 F0 0A 644 BEQ ITS000D ; IF SO, WORLD IS PEACHY-KEEN.
3F94 A4 47 645 NOGOOD LDY YCNT ; ELSE, LOWER TEST SYNC COUNT BY 1.
3F96 88 646 DEY ; AND TRY TO FORMAT TRACK AGAIN.
3F97 C0 10 647 CPY #10 ; MUST HAVE AT LEAST 16 NYBBLES OF TEST PVI
3F99 90 18 648 BCC DRIVERR ; IF NOT, BAD DRIVE.
3F9B 4C AE 3E 649 JMP TRKFRM ; START AGAIN
3F9E E6 41 650 ITS000D INC TRKCNT ; MOVE IN AND FORMAT NEXT
3FA0 A5 41 651 LDA TRKCNT ; TRACK.
3FA2 C9 23 652 CMP #523 ; ON TRACK 35?
3FA4 B0 12 653 BCS DONEDSK
3FA6 0A 654 ASL ; PREPARE FOR 'SEEK' ROUTINE.
3FA7 20 1E 3A 655 JSR SEEKABS ; SEEK ABSOLUTELY PHASE #N
3FAA A4 47 656 LDY YCNT ; FOR NEXT TRACK
3FAC C8 657 INY
3FAD C8 658 INY
3FAE 84 47 659 STY YCNT
3FB0 4C AE 3E 660 JMP TRKFRM
3FB3 A9 40 661 DRIVERR LDA #140 ; INDICATE DRIVE ERROR
3FB5 4C 29 3E 662 JMP HNDLERR
3FB8 4C 27 3E 663 DONEDSK JMP ALLDONE ; FINISHED! NO ERRORS.
3FBB 48 664 WBYTE PHA ; TIGHT TIMING ROUTINE. NO BRANCHES
3FBC 4A 665 LSR ; ALLOWED TO CROSS PAGE BOUNDARIES.
3FBD 05 4A 666 DRA AA ; USE A CONSTANT IN ZERO PAGE FOR TIMING
3FBF 9D BD CO 667 STA G6H,X ; WRITE MODE
3FC2 DD BC CO 668 CMP G6L,X
3FC5 68 669 PLA
3FC6 C1 00 670 CMP (ZERO,X)
3FC8 09 AA 671 DRA #5AA
3FCA EA 672 WNIBLA NOP
3FCB 48 673 WNIBLB2 PHA
3FCC 68 674 PLA
3FCD EA 675 WNIBLC NOP
3FCE 9D BD CO 676 WRNIBL STA G6H,X
3FD1 DD BC CO 677 CMP G6L,X
3FD4 60 678 RTS

```

--- END ASSEMBLY ---

TOTAL ERRORS: 00

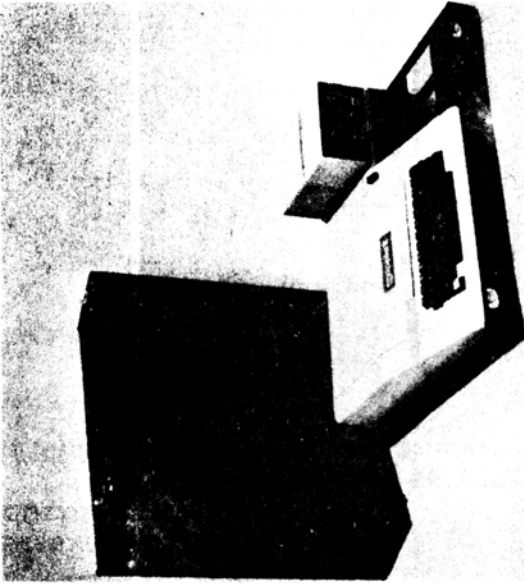


APPLE WITH SINGLE DISK DRIVE

23" x 19" x 6 1/2" 10 LBS

AP101S\$109

These attache style cases have been designed specifically to hold the APPLE computer along with disc drives and a 9" monitor in a fully operational configuration. No need to disconnect and reconnect cables each time the computer is moved. Simply plug in the power cable and connect the monitor and you are in business. The removable top has storage space for manuals, discs, tapes, working papers, and other necessities. An elastic strap in the base provides handy storage for floppy discs or tapes. The computer, disc drive and monitor are held in position with security straps and cradled in foam rubber for protection when operating, transporting, or in storage.



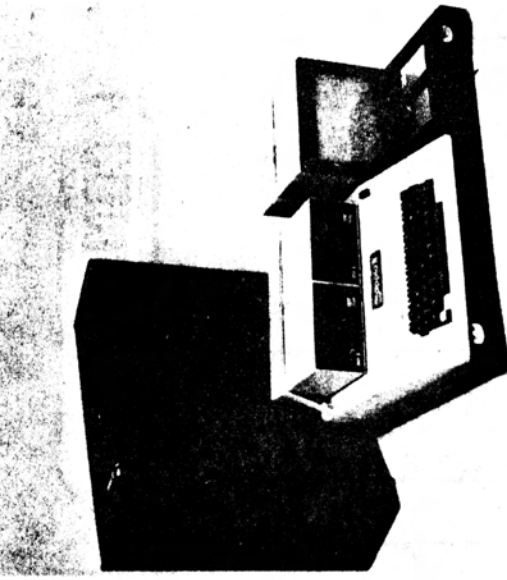
APPLE WITH DUAL DISK DRIVE

23" x 19" x 7 3/4" 11 LBS

AP102D\$119

The cases provide not only portability but a convenient method of storage free from possible damage and dust accumulation. By replacing and locking the lid, your valuable computer and software are protected from unauthorized use and tampering. You can easily control access without dismantling the setup. Delicate cables are protected from possible inadvertent damage or fatigue failure due to repeated connecting and disconnecting.

Whether you are interested in transporting your APPLE computer to and from the office, carrying it as luggage on the airlines, providing temporary storage while your desk is being used for other things, or simply for security and dust protection, the APPLE CASE is an invaluable accessory for your computer system.



APPLE, TWO DRIVES & 9" MONITOR

24 1/2" x 19 x 9 1/4" 13 LBS

AP103M\$129

SECURITY: Prevents unauthorized use and tampering.

PROTECTION: Provides a secure means of storage free from dust and protected from damage.

PORTABILITY: Your APPLE can be carried, then operated without removal from the case.

QUALITY: Made from the best luggage construction material.



HAAUG

AppleCase purchase--July/August 1980

ORDER FORM

NAME: _____ PHONE: (H) _____ (W) _____

<u>QTY</u>	<u>ITEM</u>	<u>PRICE</u>	<u>EXTENDED PRICE</u>
___	AP101S- Apple w/1 disk	\$85.00	_____
___	AP102D- Apple w/2 disks	\$90.00	_____
___	AP103M- Apple w/2 disks & monitor	\$95.00	_____
___	OTHER: _____	_____	_____
___	OTHER: _____	_____	_____

TOTAL DUE WITH ORDER-----

These prices include \$5.00 per item to cover freight charges.
Actual freight charges will be divided among the total items and any refund
or shortage due upon delivery.

Please make checks payable to LARRY BAUMANN.

Purchase co-ordinator is: Larry Baumann, 11711 Bandlon, Houston, Texas 77072
Phone: 498-3433(home) 661-2053 X244 (office)

HAAUG AppleCase purchase-- July/August 1980

RECEIPT

RECEIVED FROM: _____ BY: CASH _____ CHECK# _____ AMOUNT \$ _____

DATE: _____

Larry Baumann
(H) 498-3433
(O) 661-2053 X244

HAAUG MEMBERSHIP SURVEY

1) _____ ()
 First Name M.I. Last Name A.C. Home Phone #

 Street Address APT # City State Zip
 _____ ()
 Occupation Company Name A.C. Work Phone #

 Business Mailing Address Ste. City State Zip
 I PREFER MAIL TO: BUSINESS ☐ RESIDENCE ☐

Source # _____ Micronet # _____

2) Special Interest (Please check areas of most interest to you):

Games/Puzzles	_____	New Languages	_____
Science/Engineering	_____	Hardware	_____
Business Applications	_____	Programming	_____
Source/Micronet	_____	Other	_____

How do you use your Apple? (Answer approximate percentages):

Games _____% Business _____% Word Processing _____%
 Source/Micronet _____%

3) Help is need in the following areas. Please check where you would help if called:

a) Writing Articles For Apple Barrel	_____	h) Maintaining Hardcopy Library	_____
b) Mailing Apple Barrel (collating, stapling)	_____	i) Putting Directory Together	_____
c) Writing Programs For Apple Library	_____	j) Helping on Membership	_____
d) Evaluating Programs	_____	k) Membership Orientation	_____
e) Maintaining Program Library	_____	l) Hardware Projects	_____
f) Help Run Program Exchange	_____	m) Sale of Discount Merchandise	_____
g) Bring Apple to Program Exch.	_____	n) Office Assistance	_____
		o) Facilities Coordinator	_____
		p) Special Projects	_____
		q) Other	_____

4) What else? Any feedback you'd like to give? _____

THANK YOU !!!

(PLEASE STAPLE HERE)

(FOLD HERE)

FROM

Please
Affix
Postage

HAAUG SURVEY
% DENNIS CORNWELL
7981 KENDALIA
HOUSTON, TEXAS 77036

(FOLD THIS FLAP IN FIRST)

<<< JUST IN CASE >>>

You will find in this issue a good offer on carrying cases for the Apple. Larry Baumann is once again coordinating these purchases. Many members of the club already took advantage of the discount offer back in January and have been pleased.

It has been asked, on the other hand, if the cases from Computer Case Company of Columbus, Ohio, are flightworthy. They are not. They are not built to be handled by the airlines and jammed into the baggage boot, although for easy carrying and transportation in the trunk or back seat of a car they are just the thing.

David Phipps, a member of HAAUG, is custom building a VERY tough case that will sneer at the monkeys who bust luggage for American. For instance, an entire recording studio will go in Dave's cases to Amsterdam by KLM this August. Ed Seeger, who is making the trip with this equipment, says a troupe of dancing bears could perform on these cases and not so much as scratch them, let alone maul them! If you need to fly with your Apple, give Dave a call at 991-2324 to talk price and delivery.

HAAUG MEMBERSHIP SURVEY

Attached within this issue of the Apple Barrel is our first membership survey. The purpose of the survey is to accomplish the following objectives:

- 1) To update our information such as addresses, phone numbers, etc. (Including Source or Micronet)
- 2) To find your special interests in using your Apple. (This will help in designing meetings and articles.)
- 3) To create a force of volunteers for special areas in which we need help.
- 4) To get any other input that you wish to give.

Please give special attention to the Volunteer section (Sec. 3). This is an opportunity to strengthen our club and its activities, and get more people "involved." The survey will be most valuable if everyone responds. Won't you take a few minutes now to complete it, staple it closed, and mail it? Thanks for your help! (Results will be published soon.)

Houston Area Apple Users' Group
APPLE BARREL
Ed Seeger, Editor
4331 Nenana Drive
Houston, Texas 77035
(713) 723-6919



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